

Determinants of Poverty in Indonesia in 2019-2023: A Case Study of the Ten Poorest Provinces

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ABSTRACT: Poverty remains a persistent challenge in Indonesia, particularly in provinces with structural socioeconomic disadvantages, limited access to education, healthcare, infrastructure, and formal employment. This study examines the determinants of poverty using panel data from the ten provinces with the highest poverty rates during 2019–2023. The independent variables include Gross Regional Domestic Product (GRDP), Unemployment, Human Development Index (HDI), School Participation Rate (SPR), Domestic Investment (DI), and Foreign Direct Investment (FDI). A quantitative approach employing panel data regression with the Random Effects Model (REM) was applied, based on Hausman test results indicating that unobserved heterogeneity across provinces is best treated as random. This method allows for capturing both inter-provincial and temporal variations, providing robust estimates of the magnitude and direction of each variable's effect on poverty.

The empirical findings reveal that, simultaneously, all independent variables significantly influence poverty levels. Partially, unemployment and HDI negatively and significantly affect poverty, indicating that higher human development and lower unemployment reduce poverty. In contrast, school participation rate and domestic investment show significant positive effects, possibly reflecting the limited effectiveness or uneven distribution of education and investment benefits in these regions. Meanwhile, GRDP and FDI are not statistically significant, suggesting that general economic growth and foreign investment alone are insufficient for alleviating poverty. These results provide critical insights for policymakers, emphasizing the need for targeted strategies that integrate human development, employment generation, and effective domestic investment to achieve inclusive poverty reduction in Indonesia's poorest provinces.

KEYWORDS: Poverty, GRDP, Unemployment, HDI, School Participation Rate, Domestic Investment, FDI, Panel Data

I. INTRODUCTION

Poverty remains a fundamental development challenge in Indonesia, reflecting not only economic deprivation but also deep-rooted structural and institutional disparities across regions. Although national poverty has shown a declining trend over the past two decades, the progress has been uneven. According to the Central Bureau of Statistics (BPS, 2024), the national poverty rate stood at 9.03%, yet several provinces—particularly in Eastern Indonesia such as Papua, West Papua, East Nusa Tenggara, and Maluku—record poverty rates two to three times higher than the national average. This persistent disparity highlights that Indonesia's economic growth has not been sufficiently inclusive and that significant regional development gaps remain.

This phenomenon aligns with the Economic Development Theory proposed by Todaro and Smith (2020), which posits that poverty arises from unequal growth, limited access to productive resources, and disparities in human development. Accordingly, macroeconomic variables such as Gross Regional Domestic Product (GRDP), unemployment rate, and Human Development Index (HDI) serve as crucial indicators for assessing regional development outcomes.

Theoretically, an increase in GRDP is expected to reduce poverty by stimulating employment opportunities and increasing household income (Dhrifi, 2013; Ogwumike, 2002; Fosu, 2017). However, scholars such as Ravallion (2001, 2018) and Easterly (2000) argue that non-inclusive growth—particularly growth concentrated in capital-intensive sectors—fails to substantially alleviate poverty. High unemployment also reflects labor market failures, directly reducing household income and increasing vulnerability (Anyanwu, 2014; ILO, 2020). Yet, the magnitude of this relationship varies depending on economic

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structure, especially in regions dominated by informal employment (Fields, 2011; Gindling & Newhouse, 2014).

Beyond macroeconomic indicators, this study draws on Human Capital Theory (Becker, 1964) to underscore the pivotal role of human development in poverty reduction. Education is viewed as an investment that enhances productivity and expands economic opportunities. In this regard, the School Participation Rate (SPR) serves as an important indicator of human capital formation. Education is well-evidenced to generate high returns in terms of earnings and welfare (Psacharopoulos & Patrinos, 2018). Nevertheless, educational attainment alone may not lift households out of poverty when job opportunities are limited or when curricula are misaligned with labor-market needs (Tilak, 2002 and Hanushek & Woessmann, 2007).

This research also incorporates the Endogenous Growth Theory developed by Romer (1990), which posits that long-term economic growth is driven by investment in knowledge, innovation, and technology. Within this framework, investments — particularly Domestic Investment (DI) and Foreign Direct Investment (FDI)—serve as important drivers of expansion in productive capacity, technological spillover, and market development. Domestic investment has been shown to contribute to poverty reduction (Alfaro et al., 2019), although Lipsey (2020) notes that its benefits depend on sectoral allocation. Meanwhile, FDI may contribute to poverty alleviation through technology transfer and job creation (Nunnenkamp & Spatz, 2017), yet it may also exacerbate inequality if concentrated in sectors with low labor absorption (Moran, 2018).

While a considerable body of literature has examined determinants of poverty in Indonesia, most studies analyze these variables in isolation. Some focus solely on GRDP and unemployment (Badawi & Firmansyah, 2020), others emphasize HDI and education (Siregar & Haryanto, 2019), while certain studies examine domestic or foreign investment separately (Sutrisno et al., 2021). Even more recent studies—such as Hamun et al. (2024), Pratama & Hendrawan (2023), Salsafadhila & Cahyono (2023), and Abubakar & Bato (2024)—have not integrated all key variables simultaneously, particularly SPR, DI, and FDI, into a single empirical model. As a result, the existing literature lacks a comprehensive approach capable of capturing the complex interactions among economic and social determinants of poverty.

II. LITERATURE REVIEW

1. Poverty

Poverty is a multidimensional phenomenon characterized by the inability of individuals or households to meet basic needs such as food, health, education, and shelter (UNDP, 2007). It extends beyond income deprivation to include limited access to essential services, social participation, and opportunities for personal development. According to Todaro (2008), poverty can be classified into absolute poverty, where basic subsistence needs are unmet, and relative poverty, which reflects deprivation relative to societal standards of living. From a development perspective, poverty is often rooted in structural and institutional factors, including limited education, inadequate infrastructure, and reliance on low-productivity sectors, which together constrain households' ability to improve income and well-being.

2. GRDP

GRDP is grounded in Economic Development Theory (Todaro & Smith, 2020), which positions regional output growth as a fundamental indicator of economic advancement and welfare. Theoretically, an increase in GRDP contributes to poverty reduction through expanded productive activities, job creation, and rising household income. This proposition is supported by empirical findings from Dhrifi (2013), Ogwumike (2002), and Fosu (2017), who demonstrate that inclusive economic growth has a direct impact on lowering poverty levels. However, other studies highlight that growth alone may not lead to equitable welfare outcomes when concentrated in capital-intensive sectors or among upper-income groups. Ravallion (2001, 2018) and Easterly (2000) argue that growth is only effective in reducing poverty when accompanied by equitable income distribution and strong labor absorption capacity.

3. Unemployment

Unemployment is also tied to Economic Development Theory (Todaro & Smith, 2020), reflecting structural weaknesses in an economy's ability to absorb labor into productive employment. Conceptually, higher unemployment correlates with increased poverty due to diminished household income opportunities. This relationship is supported by Anyanwu (2014) and ILO (2020), who identify unemployment as a significant determinant of poverty in developing nations. However, Fields (2011) and Gindling & Newhouse (2014) emphasize the complexity of this relationship in economies dominated by informal employment, where precarious and undocumented work arrangements may limit the reliability of formal unemployment measures in fully capturing economic vulnerability.

4. Human Development Index (HDI)

HDI is rooted in both Economic Development Theory (Todaro & Smith, 2020) and Human Capital Theory (Becker, 1964),

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which regard improvements in human capability—specifically in education, health, and living standards—as essential to long-term poverty reduction. Higher HDI values theoretically increase individuals' labor market opportunities and earning potential. This perspective is empirically supported by Psacharopoulos & Patrinos (2018), who show that human development investments yield significant economic returns over time. Nonetheless, Tilak (2002) and Hanushek & Woessmann (2007) caution that education alone is insufficient for reducing poverty unless accompanied by relevant skill development and adequate job availability aligned with market demands.

5. School Participation Rate

School Participation Rate is directly aligned with Human Capital Theory (Becker, 1964), which conceptualizes education as an investment that enhances individual productivity and employment prospects. School Participation Rate measures the extent of educational participation among school-aged populations. Empirical evidence from Psacharopoulos & Patrinos (2018) indicates that increased educational participation is associated with improved future earnings. However, as noted by Tilak (2002) and Hanushek & Woessmann (2007), educational access alone does not significantly reduce poverty if not supported by adequate educational quality and alignment with labor market requirements.

6. Domestic Investment

Domestic investment is underpinned by Investment Theory and Endogenous Growth Theory by Romer (1990), which posit that internal capital accumulation enhances productivity, stimulates industrial development, and expands employment. Alfaro et al. (2019) provide evidence that domestic investment contributes to poverty reduction when directed toward labor-absorbing productive sectors. However, Lipsey (2020) highlights that when investment is concentrated in capital-intensive industries, its benefits may accrue primarily to firms rather than workers, thereby limiting its potential to improve welfare among poorer populations.

7. Foreign Direct Investment (FDI)

FDI is linked to Endogenous Growth Theory by Romer (1990) as well as international investment frameworks, whereby foreign capital inflows are expected to facilitate productivity gains through technology transfer, managerial expertise, and access to global markets. Nunnenkamp & Spatz (2017) demonstrate that FDI can contribute to poverty reduction through enhanced employment opportunities and technological upgrading. However, Moran (2011) warns that FDI may exacerbate inequality when allocated predominantly to sectors that require high-skilled labor or exhibit limited labor absorption, thereby restricting its positive impact on low-income groups.

III. METHODOLOGY

This study applies a quantitative research approach, which emphasizes the use of numerical data, statistical techniques, and objective measurements to test predetermined hypotheses. Through this approach, the researcher is able to quantify social and economic phenomena, identify patterns, and draw conclusions based on empirical evidence. Quantitative methods are particularly suitable for studies that aim to measure the strength and direction of relationships among variables, as they allow systematic, replicable, and unbiased analysis. Additionally, the use of numerical data enables the researcher to generalize findings more confidently, provided that the data sources are valid and reliable.

The study adopts an explanatory (associative) research design, which focuses on examining causal relationships between variables. This design is chosen because the research aims to determine how changes in key socioeconomic indicators—Gross Regional Domestic Product (GRDP), Unemployment Rate, Human Development Index (HDI), School Participation Rate (SPR), Domestic Investment (DI), and Foreign Direct Investment (FDI)—influence the Poverty Rate across regions. By using an explanatory approach, the study not only identifies whether relationships exist but also evaluates the magnitude and direction of these effects. This is crucial in understanding the dynamics of poverty in Indonesia, as socioeconomic variables often interact in complex ways. With this design, the researcher can assess whether increases in economic growth, educational participation, and investment contribute to poverty reduction, while also determining how labor market conditions or human development levels may exacerbate or alleviate poverty.

To address these research objectives, the study utilizes panel data regression analysis, which combines time-series data (observations over multiple years) and cross-sectional data (observations across provinces). The dataset covers ten of the poorest provinces in Indonesia during the 2019–2023 period, providing a comprehensive view of regional disparities as well as temporal developments. Panel data methods are selected due to their advantages over purely cross-sectional or time-series approaches. Specifically, panel regression allows the researcher to control for unobserved heterogeneity across provinces—such as cultural, geographical, or institutional characteristics—that may remain constant over time but still influence poverty

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outcomes. This leads to more efficient, unbiased, and robust parameter estimates.

Furthermore, panel regression enables the analysis of both between-province variation (differences in socioeconomic conditions across regions) and within-province variation (changes over time within the same region). By capturing these two dimensions simultaneously, the model provides richer insights into how structural and dynamic factors shape poverty levels. The technique also supports the selection of the most appropriate model—whether Pooled OLS, Fixed Effect Model (FEM), or Random Effect Model (REM)—based on statistical tests such as Chow, Breusch–Pagan Lagrange Multiplier (LM), and Hausman tests. The panel regression model applied in this study is expressed as follows:

$$\hat{Y}_{it} = \hat{a} + \hat{\beta}_1 X1_{it} + \hat{\beta}_2 X2_{it} + \hat{\beta}_3 X3_{it} + \hat{\beta}_4 X4_{it} + \hat{\beta}_5 X5_{it} + \hat{\beta}_6 X6_{it} + \varepsilon_{it}$$

Where:

Y : Poverty (%)

$\hat{a}$: constant

$X1$: Gross Regional Domestic Product (Rp)

$X2$: Unemployment Rate (%)

$X3$: Human Development Index (%) $X4$: School Participation Rate (%) $X5$: Domestic Investment (Rp)

$X6$: Foreign Direct Investment (USD)

$\hat{\beta}_1, \hat{\beta}_2, \hat{\beta}_3, \hat{\beta}_4, \hat{\beta}_5, \hat{\beta}_6$: Panel Regression Coefficients

i : Province

t : Time

ε : Error term

A. Classical Assumption Test

1) Normality Test

The normality test aims to determine whether the residuals in the regression model are normally distributed. This study applies the Jarque–Bera (J-B) test, where the residuals are considered normally distributed if the probability value is greater than 0.05.

2) Multicollinearity Test

Multicollinearity is tested using the Variance Inflation Factor (VIF). If the VIF value is ≤ 10 , the model is considered free from multicollinearity, while $VIF \geq 10$ indicates the presence of multicollinearity among the independent variables.

3) Autocorrelation Test

Autocorrelation is tested using the Durbin–Watson statistic. If the DW value is greater than the upper limit (du) and less than the number of independent variables, the model is considered free from autocorrelation. Otherwise, autocorrelation is present.

4) Heteroskedasticity Test

The heteroskedasticity test examines whether the variance of the residuals remains constant across observations. The decision is based on the significance value, where a probability greater than 0.05 indicates no heteroskedasticity. Several approaches such as scatter plots, Park, Glejser, White, and Harvey tests may be applied.

B. Best Model Test

After conducting classical assumption tests, the subsequent step is to determine the most appropriate panel regression model. The selection among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) is performed using the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test.

1) The Chow Test

The Chow Test is employed to identify the more appropriate estimation method between CEM and FEM, with hypotheses H_0 : Random Effect and H_a : Fixed Effect. The decision criterion is based on the probability value, where if $Prob > 0.05$, H_0 is accepted (H_a rejected), and if $Prob < 0.05$, H_0 is rejected (H_a accepted).

2) The Hausman Test

The Hausman Test aims to determine the more suitable model between FEM and REM, with hypotheses H_0 : Random Effect and H_a : Fixed Effect. The decision rule follows the same criterion: $Prob > 0.05$, H_0 is accepted (H_a rejected); $Prob < 0.05$, H_0 is rejected (H_a accepted).

3) The Lagrange Multiplier

The Lagrange Multiplier is used to select the most appropriate method between CEM and REM, with hypotheses H_0 : Common Effect and H_a : Random Effect. The decision is made according to the same probability-based criterion.

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Collectively, these three tests guide the selection of the most appropriate panel regression model for research analysis.

C. Statistical Tests

1) t-Test (Partial Test)

The t-test determines whether each independent variable individually affects the dependent variable. If the significance value < 0.05 , H_0 is rejected, indicating a significant effect. If > 0.05 , H_0 is accepted, meaning no significant effect of the independent variable.

2) F-Test (Simultaneous Test)

The F-test assesses whether all independent variables jointly influence the dependent variable. If the probability value is < 0.05 , H_0 is rejected and the independent variables significantly affect the dependent variable simultaneously. If the probability value is > 0.05 , H_0 is accepted, indicating no joint effect.

3) Coefficient of Determination (R^2)

R^2 measures the ability of independent variables to explain variations in the dependent variable, with values ranging between 0 and 1. The closer the R^2 value is to 1, the better the model explains the dependent variable. Conversely, a value approaching 0 indicates weak explanatory power.

IV. RESULT & CONCLUSION

This study investigates the influence of six key socioeconomic indicators on poverty levels in Indonesia, namely Gross Regional Domestic Product (GRDP), Unemployment Rate, Human Development Index (HDI), School Participation Rate (SPR), Domestic Investment (DI), and Foreign Direct Investment (FDI). These variables were selected because they represent crucial dimensions of regional development and are widely acknowledged as determinants of welfare disparities across provinces. GRDP reflects the scale of regional production, while unemployment indicates labor absorption constraints. HDI and SPR capture educational and human capital development, and DI and FDI reflect the flow of domestic and foreign capital into regional economic sectors. Together, these indicators provide a comprehensive overview of the economic and social conditions shaping poverty in different regions of Indonesia.

The research adopts an associative quantitative approach using panel data combining time-series observations from 2019 to 2023 and cross-sectional data from ten of the poorest provinces in Indonesia. This method enables the examination of both temporal variations and regional differences in poverty patterns. The analysis employs panel regression techniques because they generate more robust and efficient parameter estimates by utilizing variations across both time and regions. The model is designed to estimate how each independent variable influences the provincial poverty rate over the observation period.

Before estimation, classical assumption tests were conducted to ensure the reliability of the regression model. The Jarque – Bera test indicated that residuals were normally distributed, as the probability value exceeded the 5% significance level. The multicollinearity test showed that all Variance Inflation Factor (VIF) values were below 10, indicating no multicollinearity among independent variables. The Durbin–Watson test demonstrated that the model did not suffer from autocorrelation, while the heteroskedasticity test yielded a probability level above 0.05, indicating that the model was homoskedastic. These results confirm that the panel regression model meets the required assumptions and is suitable for hypothesis testing.

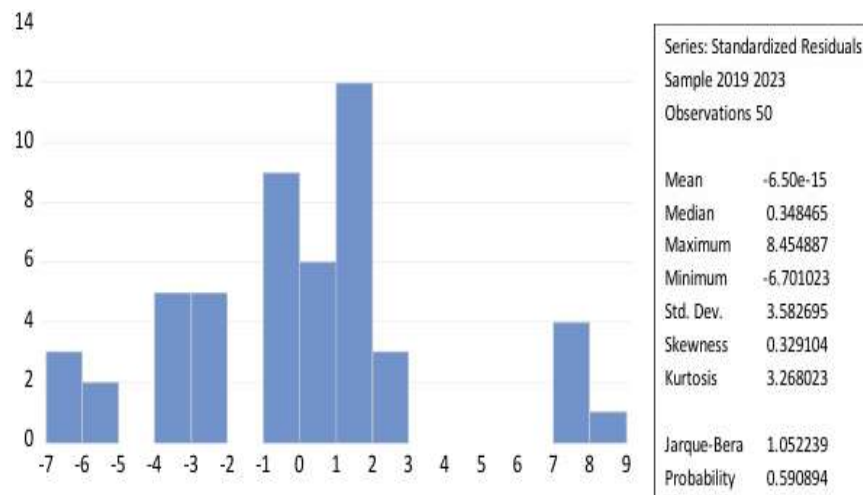
The results of model selection tests also support the validity of the estimation technique. The Chow test and Hausman test indicated that the fixed effects model was the most appropriate compared to common and random effects approaches, while the Lagrange Multiplier test confirmed that fixed effects provided more accurate estimates. Therefore, hypothesis testing and interpretation of results were conducted using the fixed effects panel regression model.

A. Classical Assumption Test

1) Normality test

The normality test is used to determine whether the data employed in the regression model—both the independent and dependent variables—are normally distributed. A regression model is considered good if the data exhibit a normal or approximately normal distribution. The assessment of normality can be observed through the residual histogram, where a bell-shaped curve indicates a normal distribution, as well as through the Jarque–Bera statistical test. The results of the normality test are presented in the following figure.

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Based on the regression estimation results above, the probability value of 0.590894 is greater than 0.05, thus H_0 is accepted, indicating that the residuals are normally distributed.

2) Multicollinearity Test

The multicollinearity test is used to determine whether there is a correlation among the independent variables in the regression model. A good regression model should not exhibit correlations between Gross Regional Domestic Product (X1), Unemployment Rate (X2), Human Development Index (X3), School Participation Rate (X4), Domestic Investment (X5), and Foreign Direct Investment (X6). If these variables are correlated with one another, the model is considered non-orthogonal. The model is said to be orthogonal when the correlation among the independent variables is equal to zero. The detection of multicollinearity is performed by examining the Variance Inflation Factor (VIF). If the VIF value exceeds 10, the model is indicated to contain multicollinearity. The results of the multicollinearity test are presented as follows:

Variance Inflation Factors

Date: 09/10/25 Time: 00:37

Sample: 1 50

Included observations: 50

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	81.94636	657.5774	NA
X1	9.70E-11	7.202751	1.971426
X2	0.144224	23.29479	2.596648
X3	0.029080	1085.709	2.568080
X4	0.017675	821.6432	4.126857
X5	9.75E-09	2.890833	1.705431
X6	1.07E-07	2.216904	1.903581

Based on the data processing results, the VIF values of the independent variables are as follows: VIF for X1 is 1.971426, VIF for X2 is 2.596648, VIF for X3 is 2.568080, VIF for X4 is 4.126857, VIF for X5 is 1.705431, and VIF for X6 is 1.903581. Since the VIF values of all six independent variables are below 10, it can be concluded that Gross Regional Domestic Product (X1), Unemployment Rate (X2), Human Development Index (X3), School Participation Rate (X4), Domestic Investment (X5), and Foreign Direct Investment (X6) are not affected by multicollinearity. This means that the independent variables do not exhibit linear relationships with one another within the regression model.

3) Autocorrelation Test

The autocorrelation test is used to determine whether a linear regression model contains correlation between the residuals of one observation and those of another, as a good regression model should be free from autocorrelation. One method commonly applied is the Breusch–Godfrey (BG) Test, which detects the relationship between current residuals and those from previous periods. The decision is made by comparing the Chi Square ($\text{Obs} \times R\text{-squared}$) probability value with the significance level (α); if the probability value is smaller than α , the model is considered to exhibit autocorrelation.

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Breusch-Godfrey Serial Correlation LM Test:

Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.124379	Prob. F(2,41)	0.8834
Obs*R-squared	0.301535	Prob. Chi-Square(2)	0.8600

Based on the results of data processing, the Chi-square(2) probability value obtained is greater than 0.05, indicating that the model does not suffer from autocorrelation.

4) Heteroskedasticity Test

The heteroskedasticity test is used to determine whether the regression model exhibits differences in the variance of residuals from one observation to another. A good regression model should be free from heteroskedasticity. The presence of heteroskedasticity can be detected by examining the Chi Square (Obs*R-squared) value and comparing it with the critical Chi Square value. If the Chi Square value is smaller than the critical value, the model is considered to be affected by heteroskedasticity. The results of the heteroskedasticity test are presented in the following table.

Heteroskedasticity Test: White

Null hypothesis: Homoskedasticity

F-statistic	2.867760	Prob. F(27,22)	0.0070
Obs*R-squared	38.93689	Prob. Chi-Square(27)	0.0642
Scaled explained SS	30.53529	Prob. Chi-Square(27)	0.2906

Based on the data processing results, the Prob. Chi-square(27) value on the Obs*R-squared is 0.0642, which is greater than the significance level (α). This indicates that the regression model is homoskedastic, meaning that there is no issue of heteroskedasticity in the model.

B. Best Model Test

This study employs panel data by considering three possible estimation models: the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). To determine the most appropriate model, three diagnostic tests were performed: the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test.

1) Chow Test

The Chow Test results indicate that the p-value of the cross-section Chi-square is $0.0000 < 0.05$, so H_0 is rejected (H_a is accepted). Therefore, the FEM is more appropriate than the CEM, and the analysis proceeds to the Hausman Test.

2) Hausman Test

The Hausman Test yields a p-value of $0.4022 > 0.05$, meaning that H_0 is accepted (H_a is rejected). This result shows that the REM is more suitable than the FEM.

3) Lagrange Multiplier Test

The Lagrange Multiplier Test results show a p-value of $0.0000 < 0.05$, which means H_0 is rejected (H_a is accepted). Thus, the REM is superior to the CEM.

Based on these three tests, it can be concluded that the most appropriate estimation model for this study is the Random Effect Model (REM).

Random Effect Model Estimation Results

The multiple linear regression analysis using REM demonstrates the relationship between the dependent variable (poverty) and the independent variables, namely GRDP, unemployment, HDI, school participation rate, domestic investment, and foreign investment. The resulting regression equation is as follows:

$$Y = 51.00976835 - 0.00000495 \cdot X_1 - 0.51467110 \cdot X_2 - 0.78104779 \cdot X_3 + 0.28435198 \cdot X_4 + 0.00003163 \cdot X_5 - 0.00001859 \cdot X_6$$

C. Statistical Test Hypothesis Testing

1. Partial Test (t-Test)

- 1) GRDP (X_1); probability value = $0.4609 > 0.05$ and coefficient = $-0.00000495 \rightarrow H_0$ is accepted (H_a is not accepted); GRDP has a not significant and negative effect on poverty.
- 2) Unemployment (X_2); probability value = $0.0010 < 0.05$ and coefficient = $-0.51467110 \rightarrow H_0$ is rejected (H_a is accepted); Unemployment has a significant and positive effect on poverty.
- 3) Human Development Index (HDI) (X_3); probability value = $0.0000 < 0.05$ and coefficient = $-0.78104779 \rightarrow H_0$ is rejected (H_a is accepted); HDI has a significant and negative effect on poverty.
- 4) School Participation Rate (X_4); probability value = $0.0095 < 0.05$ and coefficient = $0.28435198 \rightarrow H_0$ is rejected (H_a is accepted); School Participation Rate has a significant and positive effect on poverty.

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is accepted); School Participation Rate has a significant and positive effect on poverty.

- 5) Domestic Investment (X5); probability value = 0.0686 > 0.05 and coefficient = 0.00003163. At the 5% significance level, Domestic Investment has not significant, but at the 10% level, it has significant (H_0 is accepted or H_a is not accepted). Indicating a significant and positive effect on poverty.
- 6) Foreign Domestic Investment (FDI) (X6); probability value = 0.8056 > 0.05 and coefficient = -0.00001859 → H_0 is accepted (H_a is rejected); FDI has a not significant and negative effect on poverty.

2. Simultaneous Test (F-Test)

F-statistic	10.11763
Prob(F-statistic)	0.000001

Based on the F-test results, the probability F-statistic value was obtained as 0.000001. This value is smaller than the 5% significance level ($\alpha = 0.05$), so it can be concluded that H_0 is rejected (H_a is accepted). Therefore, the variables GRDP, Unemployment, HDI, School Participation Rate, Domestic Investment, and Foreign Direct Investment (FDI) simultaneously or collectively significantly influence poverty levels in the 10 poorest provinces in Indonesia from 2019 to 2023.

3. Coefficient of Determination (R^2)

R-squared	0.585365
Adjusted R-squared	0.527509

The R-squared value of 0.585365 indicates that the variables GRDP, Unemployment, Human Development Index (HDI), School Participation Rate, Domestic Investment, and Foreign Direct Investment (FDI) can explain 58.53% of the variation in poverty rates in the 10 poorest provinces in Indonesia from 2019 to 2023. Meanwhile, 41.47% of the variation in poverty rates is explained by other factors not included in this research model.

D. DISCUSSION

1. GDRP

The result indicate that GRDP has a negative but not significant effect on poverty in the ten poorest provinces in Indonesia. This outcome is largely attributable to the uneven distribution of GRDP in these provinces, where a substantial portion of regional economic output is driven by the mining sector—an industry that provides limited employment opportunities for the local population. Similar findings were reported by Sinaga (2020), Kevin et al. (2022), and Saidi et al. (2024), showing that GRDP has a negative and *not significant* effect on poverty. Kyara et al. (2022) also found in Tanzania that economic growth does not automatically reduce poverty when it is unevenly distributed across sectors. These studies suggest that GRDP alone is not sufficient to lower poverty without equitable and inclusive development.

2. Unemployment

Unemployment has a negative and significant effect on poverty in the ten poorest provinces in Indonesia. This is primarily because most residents in these provinces work in the informal sector; thus, even those formally classified as unemployed still have sources of livelihood from household businesses or subsistence farming. In addition, unemployed individuals often receive support from family members with stable incomes. Social assistance programs, such as BLT (Direct Cash Assistance), the Family Hope Program, and the Basic Food Card, also help maintain the purchasing power of poor households despite rising unemployment.

Similar findings were reported by Zanzibar et al. (2024), Anyanwu (2012), and Wibowo & Ridha (2021), indicating that unemployment does not necessarily increase poverty. In East Java, Zanzibar et al. (2024) showed that the large informal sector absorbs labor even when jobs are not officially recorded. Anyanwu (2012) also found in Africa that many people remain employed in informal work, earning at least a minimal income. Additionally, Wibowo & Ridha (2021) observed that in Indonesia's poorest provinces, such as Maluku, NTT, Papua, and West Papua, high unemployment does not automatically translate into higher poverty because most households still rely on informal and subsistence agriculture. These studies suggest that unemployment alone is not always a direct driver of poverty if alternative livelihood sources exist.

3. Human Development Index (HDI)

The results indicate that HDI has a significant and negative effect on poverty in the 10 poorest provinces in Indonesia. Improvements in education, health, and living standards effectively reduce poverty, consistent with the theory and hypothesis. Similar findings were reported by Nurul Azizah Az Zakiyyah (2024), Aspriyanti & Rospida (2025), Manihuruk &

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Suharianto (2024), and Khairida, Aisyah, & Rabbani (2023), all showing that higher HDI significantly lowers poverty. Cross-country studies by Olopade (2019) in OPEC countries and research by Wang et al. (2021) in Sub-Saharan Africa also highlight that human capital improvements, especially in education and health, contribute significantly to poverty reduction.

4. School Participation Rate

The results indicate that the School Participation Rate (SPR) has a positive and significant effect on poverty in the 10 poorest provinces in Indonesia. This is because most of the population works in the informal sector, so children aged 16 – 18 often assist their parents in farming or small businesses, contributing to household income. When these children continue their education, household income temporarily decreases while education-related expenses increase. Moreover, although the number of children attending school is relatively high, the quality of education remains inadequate. Therefore, an increase in SPR without improvements in educational quality and skills may actually contribute to higher poverty. These findings are consistent with Abdurrahman & Nahdiatuzzakiah (2022), who reported that SPR had a positive effect on poverty in Indonesia during 2013–2018. Pangeran (2022) also supports this finding, showing that despite high school participation rates, many graduates are not absorbed into the formal labor market due to skill mismatches.

5. Domestic Investment

The results indicate that Domestic Investment has a positive and significant effect on poverty in the 10 poorest provinces in Indonesia. Most domestic investment is concentrated in a few provinces, with mining regions receiving high investment while non-mining provinces receive relatively low amounts. Additionally, the mining sector is capital-intensive, so local labor absorption is limited. As a result, domestic investment does not uniformly reduce poverty. These findings align with Saidi et al. (2024) and Kyara et al. (2022), who found that investment growth does not always reduce poverty when it is uneven and concentrated in sectors that do not involve the majority of the poor.

6. Foreign Direct Investment (FDI)

Foreign Direct Investment (FDI) has a negative and not significant effect on poverty in the 10 poorest provinces in Indonesia. This is because FDI is largely concentrated in capital-intensive sectors, such as mining and energy, which absorb little local labor. As a result, increases in foreign investment do not directly reduce poverty. These findings are consistent with Wijayanti (2025), Anetor et al. (2020), and Quinonez (2018), who reported that FDI does not significantly lower poverty, as the benefits are often concentrated among higher-income groups and not broadly shared with the poor population.

V. CONCLUSION

Based on the results of the study on the determinants of poverty in the 10 poorest provinces in Indonesia during 2019 – 2023, the following conclusions can be drawn:

Gross Regional Domestic Product (X1) has a not significant and negative effect on poverty, indicating that regional economic growth does not automatically reduce poverty due to uneven income distribution and low absorptive capacity of the poor. Unemployment (X2) has a significant and positive effect on poverty, suggesting that higher unemployment increases poverty, although informal sector employment partially absorbs labor. The Human Development Index (X3) has a significant and negative effect on poverty, showing that improvements in education, health, and living standards effectively reduce poverty in the poorest provinces. School Participation Rate (X4) has a significant and positive effect on poverty, implying that higher school participation can temporarily reduce household income in poor families, especially when the quality of education is insufficient. Domestic Investment (X5) has a positive and significant effect on poverty, as investment is concentrated in a few provinces and mainly in capital-intensive sectors, providing limited employment opportunities. Foreign Direct Investment (X6) has a not significant and negative effect on poverty, because foreign investment is largely directed to capital-intensive sectors with minimal local labor absorption, so it does not directly reduce poverty.

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